

Abstract

Proton-conducting polymer membrane which comprises polyazoles and is coated with a catalyst layer and its use in fuel cells

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The present invention relates to a proton-conducting polymer membrane which comprises polyazoles and is coated with a catalyst layer and is obtainable by a process comprising the steps

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A) preparation of a mixture comprising polyphosphoric acid,

at least one polyazole (polymer A) and/or one or more compounds which are suitable for forming polyazoles under the action of heat according to step B),

B) heating of the mixture obtainable according to step A) under inert gas to temperatures of up to 400°C,

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C) application of a layer using the mixture obtained according to step A) and/or B) to a support,

D) treatment of the membrane formed in step C) until it is self-supporting,

E) application of at least one catalyst-containing coating to the membrane formed in step C) and/or in step D).